

What is claimed is:

1. A method of simultaneously making on a common assembly surface a plurality of composite cartons each comprised of a first singular carton adhered to a second singular carton, comprising the steps of:

positioning a plurality of first singular cartons in a predetermined array on the assembly surface;

positioning adhesive at one or more predetermined adhesive locations on each first singular carton in the array of first cartons on the assembly surface; and

positioning a plurality of second singular cartons en masse in a predetermined array adjacent to the array of first singular cartons on the assembly surface such that the adhesive at each adhesive location on each first singular carton contacts and bonds with a respectively corresponding second singular carton in the array of second singular cartons.

2. A method of simultaneously making a plurality of composite cartons as defined in Claim 1 comprising the additional steps of:

positioning an additional plurality of first singular cartons in a predetermined array adjacent to the array of second singular cartons on the assembly surface;

positioning adhesive at one or more predetermined adhesive locations on each first singular carton in the additional plurality of first singular cartons; and

positioning an additional plurality of second singular cartons en masse in a predetermined array adjacent the array formed by the additional plurality of first singular cartons such that the adhesive at each adhesive location on each singular first carton in the additional plurality of first cartons on the assembly surface contacts and bonds with a respectively corresponding second singular carton in the predetermined array of the additional plurality of second singular cartons.

3. A method of simultaneously making a plurality of composite cartons as defined in Claim 2 wherein the additional steps are repeated a plurality of times.

4. A method of simultaneously making a plurality of composite cartons as defined in Claim 1 comprising the additional step of positioning an object on each first singular carton in the array of first singular cartons on the assembly surface before positioning the plurality of second singular cartons en masse in a predetermined array adjacent to the array of first singular cartons on the assembly surface, whereby a plurality

of composite cartons having a first singular carton adhered to a second singular carton with an object therebetween are created on the assembly surface.

5. A method of simultaneously making a plurality of composite cartons as defined in Claim 1 wherein the first singular carton in each composite carton is separable from the corresponding second singular carton in each composite carton without substantially degrading the structural integrity of either the first singular carton or the second singular carton.

6. A method of simultaneously making a plurality of composite cartons as defined in Claim 5 wherein a separating force between the first singular carton and second singular carton in each composite carton of about 20 to 22 pounds is required to separate the first singular carton from the second singular carton.

7. A method of simultaneously making a plurality of composite cartons as defined in Claim 2 wherein the quantity of first singular cartons on the assembly surface equals the quantity of second singular cartons on the assembly surface upon completion of the method steps.

8. A method of simultaneously making a plurality of composite cartons as defined in Claim 1 wherein the array in which the plurality of second singular cartons are positioned on the assembly surface is substantially identical to the array in which the plurality of first singular cartons are positioned on the assembly surface.

9. A method of simultaneously making a plurality of composite cartons as defined in Claim 1 wherein the assembly surface is a pallet.

10. A method of simultaneously making a plurality of composite cartons as defined in Claim 1 wherein the assembly surface is a conveyor.

11. A method of simultaneously making a plurality of composite cartons as defined in Claim 1 wherein the assembly surface is one or more chains.

12. A method of simultaneously making a plurality of composite cartons as defined in Claim 1 wherein each first singular carton and each second singular carton contain products before being positioned on the assembly surface.

13. A method of simultaneously making a plurality of composite cartons as defined in Claim 1 wherein the products contained in each first singular carton differ from the products contained in each second singular carton.

14. A method of simultaneously making a plurality of composite cartons as defined in Claim 1 wherein the products contained in each first singular carton are identical to the products contained in each second singular carton.

15. A method of simultaneously making a plurality of composite cartons as defined in Claim 1 comprising the additional step of detecting the presence or absence of adhesive at each adhesive location after adhesive is deposited on each first singular carton.

16. A method of simultaneously making a plurality of composite cartons as defined in Claim 15 comprising the additional step of applying additional adhesive on one or more first singular cartons in response to detection of the absence of adhesive at each predetermined adhesive locations.

17. A method of simultaneously making a plurality of composite cartons as defined in Claim 15 comprising the additional step of activating an alarm in response to detection of the absence of adhesive at each predetermined adhesive locations.

18. A method of simultaneously making a plurality of composite cartons as defined in Claim 15 wherein the adhesive contains material reactive to light and the presence or absence of adhesive at each predetermined adhesive location is detected using an apparatus capable of detecting the reaction of such material to light.

19. A method of simultaneously making a plurality of composite cartons as defined in Claim 1 comprising the additional step of making one or more cuts in the surface of each first singular carton at the predetermined adhesive locations prior to the positioning of adhesive at the predetermined adhesive locations.

20. A method of simultaneously making on a pallet a plurality of composite cartons each comprised of a first singular carton adhered to a second singular carton, comprising the steps of:

- providing a supply of first singular cartons stacked in layers, each layer having a plurality of first singular cartons;

- providing a supply of second singular cartons stacked in layers, each layer having a plurality of second singular cartons;

- positioning a layer of first singular cartons from the supply of first singular cartons on a pallet;

positioning adhesive at one or more predetermined adhesive locations on each first singular carton in the layer of first cartons on the pallet; and

positioning a layer of second singular cartons adjacent to the layer of first singular cartons on the pallet such each second singular carton is coextensive with a first singular carton and such that the adhesive at each adhesive location on each first singular carton contacts and bonds with a respectively corresponding second singular carton, whereby a plurality of composite cartons having a first singular carton adhered to a coextensive second singular carton is created on the pallet.

21. A method of simultaneously making on a pallet a plurality of composite cartons as defined in claim 20 comprising the additional steps of:

positioning an additional layer of first singular cartons from the supply of first singular cartons adjacent to the layer of second singular cartons on the pallet such that no first singular carton in the additional layer of first singular cartons is coextensive with a second carton adjacent thereto;

positioning adhesive at one or more predetermined adhesive locations on each first singular carton in the additional layer of first cartons on the pallet; and

positioning an additional layer of second singular cartons from the supply of second singular cartons adjacent the additional layer of first singular cartons on the pallet such that each second singular carton in the additional layer of second singular cartons on the pallet is coextensive with a first singular carton adjacent thereto and such that the adhesive at each adhesive location on each first singular carton in the additional layer of first singular cartons contacts and bonds with a respectively coextensive second singular carton coextensive carton in the additional layer of second singular.

22. A method of simultaneously making on a pallet a plurality of composite cartons as defined in claim 21 wherein the additional steps are repeated a plurality of times.

23. A method of simultaneously making on a pallet a plurality of composite cartons as defined in claim 20 wherein the first singular carton in each composite carton is separable from the corresponding second singular carton in each composite carton without substantially degrading the structural integrity of either the first singular carton or the second singular carton.

24. A method of simultaneously making a plurality of composite cartons as defined in Claim 23 wherein an outward force between the first singular carton and second singular carton in each composite carton of approximately 20 to 22 pounds is required to separate the first singular carton from the second singular carton.

25. A method of simultaneously making on a pallet a plurality of composite cartons as defined in claim 20 wherein each first singular carton and each second singular carton contain products before being positioned on the pallet.

26. A method of simultaneously making on a pallet a plurality of composite cartons as defined in claim 25 wherein the products contained in each first singular carton differ from the products contained in each second singular carton.

27. A method of simultaneously making on a pallet a plurality of composite cartons as defined in claim 20 wherein each first singular carton in the supply of first singular cartons and each second singular carton in the supply of second singular cartons contains beverage products.

28. A method of simultaneously making on a pallet a plurality of composite cartons as defined in claim 20 wherein the positioning of layers of singular cartons is performed by a crane.

29. A method of simultaneously making on a pallet a plurality of composite cartons as defined in claim 20 wherein the positioning of layers of singular cartons is performed by a traveling crane supported by a gantry.

30. A method of simultaneously making on a pallet a plurality of composite cartons as defined in claim 20 wherein the positioning of layers of singular cartons is performed by a robot.

31. A method of simultaneously making on a pallet a plurality of composite cartons as defined in claim 30 wherein the supply of first singular cartons stacked in layers, the supply of second singular cartons stacked in layers, and the pallet are approximately equal distances from the robot.

32. A method of simultaneously making on a pallet a plurality of composite cartons as defined in claim 20 wherein the pallet is lowered after each layer of singular cartons is positioned thereon.

33. A method of simultaneously making on a pallet a plurality of composite cartons as defined in claim 20 wherein the supply of first singular cartons stacked in layers and the supply of second singular cartons stacked in layer are each raised after a layer of singular cartons is removed therefrom.

34. A method of simultaneously making on a pallet a plurality of composite cartons as defined in claim 20 comprising the additional step of detecting the presence or absence of adhesive at each adhesive location after adhesive is deposited on each first singular carton.

35. A method of simultaneously making on a pallet a plurality of composite cartons as defined in claim 34 comprising the additional step of applying additional adhesive on one or more first singular cartons in response to detection of the absence of adhesive at each predetermined adhesive locations.

36. A method of simultaneously making on a pallet a plurality of composite cartons as defined in claim 34 comprising the additional step of activating an alarm in response to detection of the absence of adhesive at each predetermined adhesive locations.

37. A method of simultaneously making on a common assembly surface a plurality of composite cartons each comprised of a first singular carton adhered to a second singular carton adhered to a third singular carton, comprising the steps of:

positioning a plurality of first singular cartons in a predetermined array of first singular cartons onto an assembly surface;

positioning adhesive at one or more predetermined adhesive locations on each first singular carton in the array of first singular cartons on the assembly surface;

positioning a plurality of second singular cartons en masse in a predetermined array adjacent to the array of first singular cartons on the assembly surface such that the adhesive at each adhesive location on each first singular carton contacts and bonds with a respectively corresponding second singular carton;

positioning adhesive at one or more predetermined adhesive locations on each second singular carton in the array of second singular cartons on the assembly surface;
and

positioning a plurality of third singular cartons en masse in a predetermined array adjacent to the array of second singular cartons on the assembly surface such that the adhesive at each adhesive location on each second singular carton contacts and bond with a respectively corresponding third singular carton.

38. A method of simultaneously making a plurality of composite cartons as defined in Claim 37 comprising the additional steps of:

positioning an additional plurality of first singular cartons in a predetermined array adjacent to the array of third singular cartons on the assembly surface;

positioning adhesive at one or more predetermined adhesive locations on each first singular carton in the additional array of first cartons on the assembly surface;

positioning an additional plurality of second singular cartons adjacent to the array of additional first singular cartons such that the adhesive at each adhesive location on each first singular carton of the additional array of first singular cartons contacts and bonds with a respectively corresponding second singular carton in the additional array of second singular cartons;

positioning adhesive at one or more predetermined adhesive locations on each second singular carton in the additional array of second singular cartons; and

positioning an additional plurality of third singular cartons adjacent to the array of additional second singular cartons such that the adhesive at each adhesive location on each second singular carton of the additional array of second cartons contacts and bonds with a respectively corresponding third singular carton in the additional array of third singular cartons.

39. A method of simultaneously making a plurality of composite cartons as defined in Claim 38 wherein the additional steps are repeated a plurality of times.